Spinal Cord Injury in Arkansas

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Since 1977 the Arkansas Spinal Cord Commission (ASCC) has maintained a registry of residents with spinal cord disability. The registry is used to identify persons who are eligible to receive ASCC services.

Medical Criteria: To be included on the registry, an individual must have incurred damage to the spinal cord by trauma, infection, tumor, disease, developmental defect or degenerative disorder. In addition, the severity of the damage must result in lack of normal function in three (3) of four (4) areas: paralysis, sensation, bladder control and bowel control.

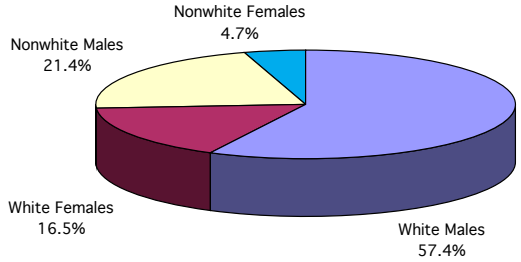
As a result of applying the medical criteria, persons with spinal cord injury (SCI) placed on the registry generally have permanent injuries and are severely affected.

Incidence: For the 2005-2007 three year time period, a mean average of 111.3 spinal cord injury (SCI) cases were added to the registry each year. This is an annual rate of 39.6 SCIs per million population using 2006 population estimates. The Arkansas incidence rate is lower than other states due to the more restrictive medical criteria that ASCC uses for inclusion on the registry.

Prevalence: As of June 2008 there were 1381 persons living with spinal cord injury in Arkansas on the registry. A descriptive analysis of these persons follows.

Age at injury: Spinal cord injuries are mainly incurred by young adults. More than half (51.6%) of all SCIs occur to persons between the ages of 16 to 30. Persons age 15 and under account for 5.8 percent of all SCIs; age 31 to 40, 19.2 percent; 41 to 50, 12.8 percent; and age 51 and over, 10.6 percent.

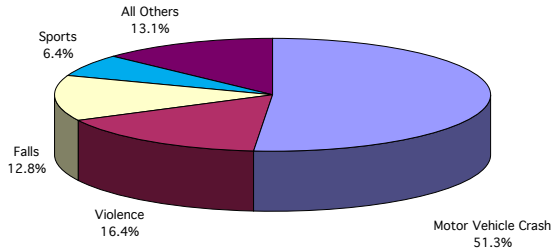
Gender: Males constitute 78.8 percent of all spinal cord injuries.



Race: Whites makeup nearly three-fourths (74.0%) of all SCIs in Arkansas; African Americans, 23.3 percent and all others, 2.7 percent.

Ethnicity: Persons of Hispanic ethnicity constitute 2.0 percent of all spinal cord injuries.

Etiology: Over half (51.3%) of SCIs in Arkansas are due to motor vehicle crashes. Violence, mainly



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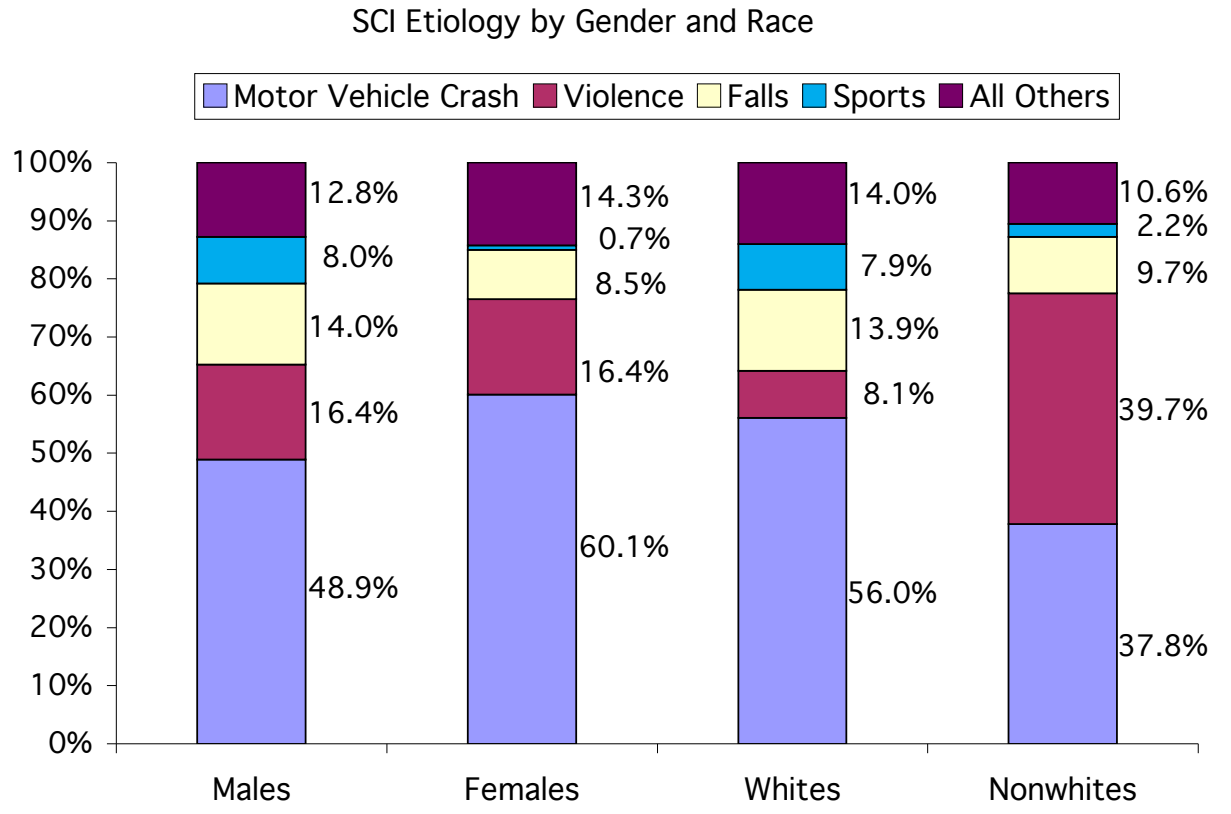

gunshot, is the second leading cause at 16.4 percent, falls are next at 12.8 percent, followed by sports at 6.4 percent and all other causes 13.1 percent.

The SCI etiology breakdown for males, since they constitute 78.8 percent of all SCIs, is very similar to the total population. Females, however, sustained more of their injuries by motor vehicle crashes (60.1%) and fewer by falls (8.5%) and sports (0.7%).

Whites are similar to the etiology breakdown of the total population except that fewer of their injuries were caused by violence (8.1%) and slightly more by motor vehicle crashes (56.0%). For nonwhites the primary cause of SCI is violence (39.7%) followed by motor vehicle crashes (37.8%).

Veterans: Veterans make up 15.2 percent of all spinal cord injuries. Of all (209) veterans, the vast majority (97.6%) are male; and most (84.9%) injuries to veterans were not related to their military duty.

Alcohol Involvement: At the time of injury, there was evidence of alcohol intoxication or the injured person tested above the legal blood alcohol limit in 22.5 percent of the cases. In 29.8 percent of all cases there was another person who played an active part in the injury situation, such as, a driver of another vehicle who was intoxicated. Thus, alcoholic impairment plays a major role in the cicumstances surrounding SCI.

Motor Vehicle Crashes: Motor vehicle crashes accounted for 708 of the total 1381 spinal cord injuries. Of these 708 injuries, 72.4 percent of the persons injured did not have their safety belt on or any other safety equipment in use, such as, child safety seat, airbag or motorcycle helmet. The injured person was ejected from the vehicle in 45.7 percent of the crashes and in 59.4 percent the motor vehicle rolled over.

Neurological Level and Extent of Lesion: Injury to the cervical area of the spinal cord results in tetraplegia (42.1%); injury to the thoracic, lumbar or sacral areas of the cord result in paraplegia (57.9%). Tetraplegic injuries are more severe than

paraplegic injuries.

Individuals who have lost all motor and sensate ability below the level of injury are termed complete (47.7%). Those individuals who have retained some motor or sensate ability below the level of injury are termed incomplete (52.3%). Complete injuries are more severe than incomplete injuries at a given level of injury.

Employment Status: At the time of their injury, 53.7 percent indicated that they were working full or part time. An additional 13.9 percent were students; unemployed but of working age made up 15.5 percent; child or infant 7.0 percent; retired 4.8 percent; homemaker 2.8 percent and all others 2.3 percent.

Work Related: Only 14.1 percent of the injuries were work related.

Education: High school graduates made up 38.4 percent of SCIs at the time of injury. Some high school but no diploma 28.0 percent and just elementary school 8.6 percent. Some had attended college but did not have a degree 15.5 percent; and some attended college and had a degree 8.3 percent. A few persons were not of school age at time of injury 1.2 percent.

State Where Injured: Most (81.7%) of the injuries occurred in Arkansas.

Discharge Disposition: A person with an SCI is typically admitted to an acute care hospital for treatment. Depending on the severity of the injury, an individual may be discharged home, to a residential living facility or to a rehabilitation hospital. Most (76.5%) are discharged to a rehabilitation hospital. After rehabilitative care, an individual may again be discharged to home, a residential facility or for additional acute or rehabilitation care.

The discharge disposition for persons injured after their initial acute and rehabilitative care, is:

Second acute/rehab facility	5.6%
Home, self care	26.2%
Home, non-skilled care	48.5%
Home, skilled care	12.5%
Residential facility, non-skilled care	0.5%
Residential facility, skilled care	3.2%
Other	1.9%

Thus, a large majority (87.2%) of persons with spinal cord injury were able to return home after their initial hospitalization for acute and rehabilitative care.

Cost: The health care costs for the initial hospitalization and for lifetime living expenses associated with SCI are enormous. These costs vary greatly with severity of injury and age at injury.

Although ASCC does not track overall financial costs, the Model Spinal Cord Injury System (MSICS) has estimated these costs. MSICS estimates first year expenses range from $228,566 to $775,567. Subsequent yearly expenses range from $16,018 to $138,923. Estimated lifetime costs for a person 25 years old, at time of injury, range from $681,843 to $3,059,184. A 50 year old person, at time of injury, ranges from $494,145 to $1,800,958.

Return to Work: Most persons with a spinal cord injury do not return to work or enter the work force after being injured. In a major 1996 study of 650 persons with SCI, ASCC found that 76.1 percent did not return to work or school after injury.

Secondary Conditions: Persons with SCI are more apt to develop secondary conditions or medical complications that are more likely to occur because a person has a SCI. In 1996 ASCC found these secondary conditions to be most frequently cited among 650 persons with SCI:

Changes in sexual functioning	86.9%
Spasms	83.7%
Depression	62.9%
Chronic pain	62.0%
Urinary tract infection	55.1%
Fatigue	47.6%
Limitations in range of motion	40.2%
Pressure sores	37.2%
Fractures	35.3%
Pneumonia	32.5%

Hemorrhoids	30.2%
Autonomic dysreflexia	28.9%

Life Expectancy: On average, an individual with SCI has a reduced life expectancy compared with persons without a spinal cord injury. MSCIS has estimated life expectancy by severity and age of injury. A paraplegic, who was 20 years old at the time of injury and is one year post-injury, can expect to live another 45.8 years; a 40 year old at time of injury, 28.2 years; and a 60 year old at time of injury, 13.2 years.

A low level (C5-C8) tetraplegic, who was 20 years old at the time of injury and is one year post-injury, can expect to live another 41.0 years; a 40 year old at time of injury, 24.2 years; and a 60 year old at time of injury, 10.4 years.

A high level (C1-C4) tetraplegic, who was 20 years old at the time of injury and is one year post-injury, can expect to live another 37.4 years; a 40 year old at time of injury, 21.2 years; and a 60 year old at time of injury, 8.6 years.

Cause of Death: Many medical advances have been made in the care of persons with spinal cord injury over the last 40 years. Whereas a large percentage of persons with SCI did not survive in years past, individuals today can expect to live close to a normal life span. The major causes of death today are respiratory diseases (22.0%), heart disease (20.6%), external causes (16.0%), cancer (11.0%), septicemia (9.8%) and all other causes (20.6%).

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